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Report on the review of the report to facilitate the calculation of the assigned amount for the second commitment period of the Kyoto Protocol of the European Union

Note by the expert review team

Summary

According to decision 2/CMP.8, each Party with a quantified emission limitation or reduction commitment inscribed in the third column of Annex B to the Kyoto Protocol, as contained in annex I to decision 1/CMP.8, shall submit to the secretariat a report to facilitate the calculation of the assigned amount for the second commitment period of the Kyoto Protocol. In accordance with decision 22/CMP.1, annex, paragraph 11, in conjunction with decision 4/CMP.11, the report to facilitate the calculation of the assigned amount is subject to a review. This report presents the results of the technical review of the report to facilitate the calculation of the assigned amount for the second commitment period of the Kyoto Protocol, conducted by an expert review team in accordance with the "Guidelines for review under Article 8 of the Kyoto Protocol". The review took place from 19 to 24 September 2016 in Bonn, Germany.

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I. Introduction[1]

1. The review of the report to facilitate the calculation of the assigned amount for the second commitment period of the Kyoto Protocol (hereinafter referred to as the report to facilitate the calculation of the assigned amount) of the European Union was organized by the UNFCCC secretariat, in accordance with the "Guidelines for review under Article 8 of the Kyoto Protocol".[2] The review took place from 19 to 24 September 2016 in Bonn, Germany, and was coordinated by Mr. Vitor Gois Ferreira and Mr. Pedro Torres (UNFCCC secretariat). Table 1 provides information on the composition of the expert review team (ERT) that conducted the review of the European Union.

2. A draft version of this report was communicated to the European Union, which provided comments that were considered and incorporated, as appropriate, into this final version of the report.

Table 1
Composition of the expert review team that conducted the review of the European Union

Area of expertise	*Name*	*Party*
Generalist	Mr. Riccardo De Lauretis	Italy
	Mr. Giorgi Mukhigulishvili	Georgia
Energy	Mr. Lawrence Kotoe	Ghana
	Mr. Takashi Morimoto	Japan
	Ms. Audace Ndayizeye	Burundi
	Ms. Regine Röthlisberger	Switzerland
IPPU	Ms. Marisol Bacong	Philippines
	Mr. Kent Buchanan	South Africa
	Mr. Roman Kazakov	Russian Federation
Agriculture	Mr. Sorin Deaconu	Romania
	Mr. Asaye Ketema Sekie	Ethiopia
LULUCF	Mr. Max Collett	Australia
	Ms. Paula Ollila	Finland
	Mr. Juan José Rincón Cristóbal	Spain
	Mr. Iordanis Tzamtzis	Greece
Waste	Ms. Violeta Hristova	Bulgaria
	Mr. Gustavo Mozzer	Brazil
Lead reviewers	Mr. Riccardo De Lauretis	
	Mr. Asaye Ketema Sekie	

[1] At the time of publication of this report, the European Union had submitted its instrument of ratification of the Doha Amendment; however, the amendment had not yet entered into force. The implementation of the provisions of the Doha Amendment is therefore considered in this report in the context of decision 1/CMP.8, paragraph 6, pending the entry into force of the amendment.

[2] Decision 22/CMP.1 and its annex and any revisions contained in decision 4/CMP.11 and its annex I.

Abbreviations: IPPU = industrial processes and product use, LULUCF = land use, land-use change and forestry.

II. Summary of the reporting on mandatory elements in the report to facilitate the calculation of the assigned amount

3. Table 2 provides a summary of the ERT's assessment of the reporting of mandatory elements by the European Union in its report to facilitate the calculation of the assigned amount. Key data and elections by the Party are included in table 4.

Table 2
Expert review team's assessment of the reporting of mandatory elements by the European Union in its report to facilitate the calculation of the assigned amount

Item	*Reported*	*Comment*
General Party information		
Date of submission		Original submission: 23 September 2016 Revised submission: 14 December 2017
Are there any missing categories or issues related to completeness[a] in the reporting of GHG emissions by sources and removals by sinks for the base year or period?	Yes	For further information, see document FCCC/ARR/2016/EU
Was the GHG inventory recalculated in accordance with decision 4/CMP.7 for all years from 1990 to the most recent year available?	Yes	
Did the Party report the base year for NF_3?	Yes	See annex I, table 4
Information related to agreement by the Party under Article 4 of the Kyoto Protocol to implement commitments jointly		
Has complete information been reported in accordance with decision 3/CMP.11, paragraph 11, by the Party in fulfilment of its agreement under Article 4 of the Kyoto Protocol in relation to the following:		
(a) Application of decision 1/CMP.8, paragraphs 23–26, related to carry-over and the previous period surplus reserve account	Yes	
(b) Calculation of base-year emissions	Yes	See annex I, table 4. For further information, see ID#s 2 and 3 in table 3
(c) Calculation of the assigned amount	Yes	See annex I, table 4. For further information, see ID#s 2 and 3 in table 3
(d) Calculation of the commitment period reserve	Yes	See annex I, table 4. For further information, see ID# 11 in table 3
(e) Application and calculation pursuant to decision 2/CMP.7, annex, paragraph 13	Yes	For further information, see ID# 8 in table 3
Information related to the assigned amount and the commitment period reserve		
Was the assigned amount in the original submission calculated in accordance with Article 3, paragraph 8, of	No	See annex I, table 4. For further information, see ID#s 2 and 3 in

Item	*Reported*	*Comment*
the Kyoto Protocol, Article 3, paragraphs 7 bis, and 8 bis, as contained in the Doha Amendment, and decision 13/CMP.1 in conjunction with decision 3/CMP.11?		table 3
Has the Party reported in the original submission the difference between the assigned amount for the second commitment period and average annual emissions for the first three years of the first commitment period, multiplied by eight?	No	See annex I, table 4. For further information, see ID# 5 in table 3
Has the Party indicated in the original submission the approach[b] used to calculate average annual emissions for the first three years of the first commitment period?	Yes	See annex I, table 4
Did land-use change and forestry constitute a net source of GHG emissions in the base year, and therefore did the Party include emissions from deforestation in the calculation of the assigned amount?	Yes	For further information, see ID# 9 in table 3
Was the commitment period reserve in the original submission calculated in accordance with the annex to decision 18/CP.7, the annex to decision 11/CMP.1, the annex to decision 13/CMP.1, paragraph 8 quinquies, and decision 1/CMP.8, paragraph 18?	No	See annex I, table 4. For further information, see ID# 11 in table 3
Information related to activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol		
If the Party identified activities elected under Article 3, paragraph 4, of the Kyoto Protocol, are these elections in accordance with decision 2/CMP.7, annex paragraphs 6–8?	Yes	See annex I, table 4
Do the activities elected under Article 3, paragraph 4, of the Kyoto Protocol for the second commitment period include at least those activities elected for the first commitment period?	Yes	
Is information reported on how the national system under Article 5, paragraph 1, of the Kyoto Protocol will identify land areas associated with all additional elected activities and how the Party ensures that land that was accounted for in the first commitment period continues to be accounted for in the second commitment period?	Yes	For further information, see ID# 6 in table 3
Has the Party identified for each activity under Article 3, paragraphs 3 and 4, of the Kyoto Protocol whether it intends to account annually or for the entire commitment period?	Yes	See annex I, table 4
Did the Party provide information on the forest management reference level, including, if appropriate, information on technical corrections and information on how emissions from harvested wood products originating from forests prior to the start of the second commitment period have been calculated in the reference level?	No	See annex I, table 4. For further information, see ID# 7 in table 3
Has the Party reported the quantity amounting to 3.5% of the base-year GHG emissions, excluding LULUCF, in the original submission?	No	See annex I, table 4. For further information, see ID# 8 in table 3

Item	*Reported*	*Comment*
Did the Party indicate whether it intends to apply the provisions to exclude emissions from natural disturbances for the accounting for afforestation and reforestation and/or forest management and provide the relevant information in accordance with decision 2/CMP.7, annex, paragraph 33?	Yes	See annex I, table 4. For further information, see ID# 10 in table 3
Information related to the national system and national registry		
Was a description of the national system provided, in accordance with the guidelines for national systems under Article 5, paragraph 1, of the Kyoto Protocol?	Yes	For further information, see ID# 12 in table 3
Was a description of the national registry provided, in accordance with the requirements contained in the annex to decision 13/CMP.1, the annex to decision 5/CMP.1 and the technical standards for data exchange between registry systems adopted by the CMP?	Yes	For further information, see ID# 13 in table 3

Abbreviations: CMP = Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol, GHG = greenhouse gas, LULUCF = land use, land-use change and forestry.

[a] Issues related to missing categories and completeness are only for those categories for which methods are available in the *2006 IPCC Guidelines for National Greenhouse Gas Inventories*.

[b] Parties may elect to calculate average annual emissions for the first three years of the first commitment period by including either the gases and sources listed in Annex A to the Kyoto Protocol, or the GHGs, sectors and source categories used to calculate the assigned amount for the second commitment period.

III. Technical assessment of the elements reviewed

4. In accordance with decision 22/CMP.1, and in conjunction with decisions 4/CMP.11 and 10/CMP.11, the review of the report to facilitate the calculation of the assigned amount for the European Union has been undertaken together with the review of the inventory submission for the first year of the second commitment period.[3] Table 3 contains additional information, if any, to support the ERT's assessment included in table 2 above of the Party's capacity to account for its emissions and the assigned amount, specifically related to: the calculation of the assigned amount for the second commitment period and any adjustments applied; information related to Article 3, paragraph 7 ter, as contained in the Doha Amendment; information related to reporting of activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol; calculation of the commitment period reserve; and the national system and national registry.

Table 3

Additional findings of the expert review team, if any, related to the European Union's reporting of mandatory elements in its report to facilitate the calculation of the assigned amount

ID#	*Finding classification*	*Description of the finding*	*Classification of problem*
1.	Calculation of the assigned amount	In its original submission, the European Union reported its base-year emissions to be 5 873 451 818 t CO_2 eq and its assigned amount to be 15 834 335 860 t CO_2 eq. The Party stated in its report to facilitate the calculation of the assigned amount that the assigned amount of the European Union (15 834 334 860 t CO_2 eq) is the difference between the joint assigned amount (37 625 402 324 t CO_2 eq) and the sum of the individual assigned amounts of the member States and Iceland (21 791 067	Not a problem

[3] The annual review report on the 2016 inventory submission of the European Union is available at <http://unfccc.int/resource/docs/2016/arr/eu.pdf>, while the annual review report on the 2015 inventory submission of the European Union is available at <http://unfccc.int/resource/docs/2015/arr/eu.pdf>.

ID#	*Finding classification*	*Description of the finding*	*Classification of problem*
		463 t CO_2 eq) During the review, on 14 December 2017, the European Union provided a revised base-year emission estimate (5 870 132 205 t CO_2 eq), a revised base-year emission estimate after the application of Article 3, paragraph 7 bis, of the Kyoto Protocol (5 875 692 700 t CO_2 eq), a revised calculation of the joint assigned amount (37 604 433 280 t CO_2 eq), a revised initial assigned amount of the European Union (15 813 089 340 t CO_2 eq) and a revised commitment period reserve of the European Union (14 231 780 406 t CO_2 eq). The ERT acknowledges the revised values provided by the European Union in response to the list of potential problems (see ID# 2 below). The ERT identified a miscalculation owing to errors (see ID# 2 below) and further determined the assigned amount of the European Union to be 15 813 089 338 t CO_2 and concluded that the difference in the assigned amount reported by the European Union was due to incorrect rounding of individual member States' assigned amounts in the calculation of the joint assigned amount	
2.	Calculation of the assigned amount	The ERT notes that the European Union, its member States and Iceland stated that they would fulfil their emission reduction targets under the second commitment period jointly.[a] The joint assigned amount for the European Union, its member States and Iceland is calculated pursuant to the quantified emission limitation and reduction commitment listed in the third column of the table contained in Annex B to the Kyoto Protocol, while the assigned amount of each member State and Iceland is determined in accordance with the terms of the joint fulfilment agreement and fixed based on annex II to European Commission decision 2013/162/EU and as adjusted by European Commission implementing decision 2013/634/EU[b] The Party stated in its report to facilitate the calculation of the assigned amount that the assigned amount of the European Union is the difference between the joint assigned amount and the sum of the individual assigned amounts of the member States and Iceland. Therefore, the ERT considers that any recalculations or adjustments of the base-year emissions of European Union member States and Iceland, in the context of the 2016 review of the initial reports of member States and Iceland for the second commitment period of the Kyoto Protocol, may have an impact on the calculation of the joint assigned amount of the European Union. During the review, the European Union clarified that some member States had already started receiving their respective lists of potential problems, which may lead to recalculations or adjustments of their base-year emissions As the joint assigned amount and the initial assigned amount of the European Union is calculated based on the sum of the base-year emissions of member States and Iceland, the ERT considered that the original submission of the European Union's report to facilitate the calculation of the assigned amount could not be used by the ERT for the review of the calculation of the joint assigned amount and the assigned amount of the European Union owing to potential recalculations or adjustments of the base-year emissions of member States and Iceland. Consequently, the ERT included this issue in the list of potential problems On 14 December 2017, the European Union provided a revised submission of its report to facilitate the calculation of the assigned amount, taking into consideration any recalculation of the assigned amounts as contained in the final initial review reports of the member States and Iceland. This revised submission contained revised base-year emission estimates and a revised calculation of the joint assigned amount (37 604 433 280 t CO_2 eq) and the initial assigned amount of the European Union (15 813 089 340 t CO_2 eq). However, the ERT determined the assigned amount of the European Union to be 15 813 089 338 t CO_2 and concluded that the difference between this	Not a problem

ID#	*Finding classification*	*Description of the finding*	*Classification of problem*
		and the assigned amount reported by the European Union was due to incorrect rounding of individual member States' assigned amounts in the calculation of the joint assigned amount The ERT considers that the assigned amount was calculated in accordance with Article 3, paragraphs 7 bis, 8 and 8 bis, of the Kyoto Protocol, the annex to decision 13/CMP.1 and annex I to decision 3/CMP.11	
3.	Calculation of the assigned amount	In its original report to facilitate the calculation of the assigned amount (initial report), the European Union reported that the final extent of the territorial coverage of the United Kingdom of Great Britain and Northern Ireland for the second commitment period of the Kyoto Protocol had yet to be fully determined During the review week, the European Union informed the ERT that the territorial coverage of the United Kingdom includes emissions from the United Kingdom's crown dependencies and those United Kingdom overseas territories that were included in the list of territories under the United Kingdom's ratification of the Convention and its Kyoto Protocol during the first commitment period. The European Union further clarified that the final extent of the territorial coverage of the United Kingdom for the second commitment period of the Kyoto Protocol had yet to be fully determined, as it would depend on which of the United Kingdom's crown dependencies and overseas territories join the United Kingdom's ratification in respect of the second commitment period The ERT considered, at that time, that the final extent of the territorial coverage of the European Union had not yet been fully determined and included this issue in the list of potential problems On 14 December 2017, the European Union provided a revised submission of its report to facilitate the calculation of the assigned amount clarifying that the territorial coverage of the United Kingdom had been extended to include complete coverage of emissions from the United Kingdom, its crown dependencies (Guernsey, Jersey and the Isle of Man) and its overseas territories that have joined the United Kingdom's ratification of the Convention and intend to join the United Kingdom's ratification of the Kyoto Protocol during its second commitment period (Cayman Islands, Falkland Islands and Gibraltar). The European Union further noted that Bermuda and Montserrat are not included in the United Kingdom's territorial coverage for the second commitment period The ERT considers that the final extent of the territorial coverage of the European Union is correctly determined and that the potential question of implementation was resolved	Not a problem
4.	Adjustments	The ERT has not identified the need to apply any adjustments to the estimate for the assigned amount for the second commitment period, as reported by the European Union in its revised submission of the report to facilitate the calculation of the assigned amount	Not a problem
5.	Reporting pursuant to Article 3, paragraph 7 ter, of the Doha Amendment	The ERT noted that the Party provided information on the assigned amount for the second commitment period and the average annual emissions for the first three years of the preceding commitment period, multiplied by eight, in accordance with Article 3, paragraph 7 ter, of the Doha Amendment, but did not provide the difference between these two numbers. Moreover, the ERT noted that there were recalculations to the base-year emission estimates of the European Union (see ID#s 2 and 3 above) that have an impact on the calculation of the difference between the assigned amount for the second commitment period and the average annual emissions for the first three years of the preceding commitment period, multiplied by eight On 14 December 2017, the European Union provided a revised submission	Not a problem

ID#	*Finding classification*	*Description of the finding*	*Classification of problem*
		of its report to facilitate the calculation of the assigned amount. In its revised submission, the Party reported the assigned amount for the second commitment period and average annual emissions for the first three years of the preceding commitment period, multiplied by eight, but did not report the difference between these two numbers. The ERT calculated the difference between the assigned amount for the second commitment period and average annual emissions for the first three years of the preceding commitment period, multiplied by eight, to be negative (–1 063 645 kt CO_2 eq) and concluded that no units need to be transferred to the cancellation account	
6.	Accounting of activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol	In its report to facilitate the calculation of the assigned amount, the European Union stated that the individual initial reports of the member States and Iceland or their NIRs provide the information on how, under Article 5, paragraph 1, of the Kyoto Protocol, the national system will identify land areas associated with activities under Article 3, paragraph 4, of the Kyoto Protocol and on how member States ensure that land that was accounted for in the first commitment period continues to be accounted for in the second commitment period. The Party further stated that the development of the methodological approach to identify land areas is part of member States' responsibilities	Transparency
		The ERT noted that the original report to facilitate the calculation of the assigned amount does not contain the necessary information on how member States ensure that land that was accounted for in the first commitment period continues to be accounted for in the second commitment period. The ERT further noted that information for each member State is contained in their individual reports to facilitate the calculation of the assigned amount. The ERT concludes that the required information is available but not reported in a transparent manner	
7.	Accounting of activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol	The ERT noted that information regarding the FMRL for the European Union, as inscribed in the appendix to the annex to decision 2/CMP.7, was not provided in the report to facilitate the calculation of the assigned amount, nor was a technical correction reported in the NIR. In its report to facilitate the calculation of the assigned amount, the European Union referred to the reports of the member States, which also form part of the European Union's submission, and referred to the European Union's NIR for information regarding technical corrections to member States' FMRL	Accuracy
		The ERT further noted that, in accordance with the agreement under Article 4 of the Kyoto Protocol to implement commitments jointly, the accounting for activities under Article 3, paragraphs 3 and 4, will be undertaken individually by member States. The European Union will neither issue nor cancel Kyoto Protocol units under Article 3, paragraphs 3 and 4	
		However, the ERT notes that the European Union has an FMRL inscribed in the appendix to the annex to decision 2/CMP.7, and therefore the ERT considers that information in relation to the FMRL and technical correction in accordance with decision 2/CMP.8, annex I, paragraph 1(i), should be included in the report to facilitate the calculation of the assigned amount for the European Union	
		During the review, the European Union informed the ERT that the FMRL value that should be considered under the report to facilitate the calculation of the assigned amount should be the one inscribed in the appendix to the annex to decision 2/CMP.7. The European Union also informed the ERT that information on technical corrections would be included in the next inventory submission (see ID# KL.15 in document FCCC/ARR/2015/EU)	

ID#	*Finding classification*	*Description of the finding*	*Classification of problem*
8.	Accounting of activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol	The information provided by the Party in its report to facilitate the calculation of the assigned amount did not include the quantity amounting to 3.5% of the base-year GHG emissions, excluding LULUCF, as required in decision 6/CMP.9, paragraph 12 During the review week, the Party stated that the quantity amounting to 3.5% of the base-year GHG emissions, excluding LULUCF, was 205 573 177 t CO_2 eq However, in its revised submission of the report to facilitate the calculation of the assigned amount (see ID#s 2 and 3 above), the Party provided revised estimates of the maximum accounting quantities resulting from forest management under Article 3, paragraph 4, for the second commitment period. In the revised estimates, the European Union reported the quantity amounting to 3.5% of the base-year GHG emissions, excluding LULUCF, to be 205 454 627 t CO_2 eq. The ERT agrees with the revised estimate	Not a problem
9.	Accounting of activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol	The ERT noted that the European Union applies Article 3, paragraph 7 bis, of the Kyoto Protocol at the member State level. Therefore, the calculation of whether LULUCF constitutes a net source of GHG emissions in the base year or base period, and the inclusion of deforestation in the assigned amount, is not calculated for the European Union as a whole. The ERT noted that those member States for which LULUCF constitutes a net source of GHG emissions in the base year or base period are Denmark (8 807 t CO_2 eq), Ireland (8 229.962 t CO_2 eq), Luxembourg (268 381 t CO_2 eq), the Netherlands (752 270 t CO_2 eq), Portugal (4 276 759 t CO_2 eq), the United Kingdom (246 048 t CO_2 eq) and Iceland (Iceland did not include its emissions from the conversion of forest in the calculation of the assigned amount). The European Union included the emissions from deforestation as reported by these Parties (total of 5 560 495 t CO_2 eq) in the calculation of the assigned amount in accordance with Article 3, paragraph 7 bis, of the Kyoto Protocol and decision 13/CMP.1, annex, paragraph 5(b) as replaced by decision 3/CMP.11, annex I, paragraph 2	Not a problem
10.	Accounting of activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol	The ERT noted that the report to facilitate the calculation of the assigned amount did not contain country-specific information on the background level of emissions associated with annual natural disturbances that have been included in the FMRL for the European Union, in accordance with the requirements of decision 2/CMP.8, annex I, paragraph 1(k)(i) In its report to facilitate the calculation of the assigned amount, the European Union referred to the reports of the member States and Iceland to facilitate the calculation of the assigned amount, which also form part of the European Union's submission During the review, the Party explained that the European Union will neither issue nor cancel Kyoto Protocol units under Article 3, paragraphs 3 and 4, of the Kyoto Protocol, and that consistency between the reporting of forest management in the second commitment period and the FMRL should be ensured at the level of individual member States and not at the level of the European Union	Not a problem
11.	Calculation of the commitment period reserve	In its original submission, the European Union reported its commitment period reserve as 21 777 272 968 t CO_2 eq. However, during the review, the ERT identified that there were recalculations that impact on the calculation of the commitment period reserve (see ID#s 2 and 3 above) On 14 December 2017, the European Union provided a revised submission of its report to facilitate the calculation of the assigned amount, which included a revised calculation of the commitment period reserve. In its revised submission, the Party reported its commitment period reserve to be 14 231 780 406 t CO_2 eq	Not a problem

ID#	*Finding classification*	*Description of the finding*	*Classification of problem*
		The ERT considers that the revised commitment period reserve was calculated in accordance with the annex to decision 18/CP.7, the annex to decision 11/CMP.1 and decision 1/CMP.8, paragraph 18	
12.	National system	The ERT noted a different coverage of countries, owing to the scope of the terms of the joint fulfilment agreement, from the first to the second commitment period. The joint fulfilment agreement for the second commitment period includes 28 member States and Iceland	Not a problem
		As part of the agreement between the European Union, its member States and Iceland (Council decision 2015/1340), regulation 525/2013 of the European Parliament and of the Council on a mechanism for monitoring and reporting greenhouse gas emissions and for reporting other information at national and Union level relevant to climate change (the monitoring mechanism regulation), as well as current and future delegated and implementing acts based on this regulation, are binding for the member States and Iceland	
		In accordance with Article 6, paragraph 1, of the monitoring mechanism regulation, a European Union inventory system was established to ensure the timeliness, transparency, accuracy, consistency, comparability and completeness of national inventories with regard to the European Union GHG inventory. European Commission staff working document SWD(2013)308 final outlines the main elements of the European Union inventory system	
		The ERT concludes that the information on the description of the national system provided in the report to facilitate the calculation of the assigned amount is in accordance with decision 19/CMP.1, in conjunction with decision 3/CMP.11	
13.	National registry	The ERT took note of the results of the technical assessment of the national registry, including the results of standardized testing, as reported in the standard independent assessment report that was forwarded to the ERT by the administrator of the international transaction log, pursuant to decision 16/CP.10	Not a problem

Abbreviations: ERT = expert review team, FMRL = forest management reference level, GHG = greenhouse gas, LULUCF = land use, land-use change and forestry, NIR = national inventory report.

[a] The report to facilitate the calculation of the assigned amount for the European Union is available at <http://unfccc.int/national_reports/initial_reports_under_the_kyoto_protocol/second_commitment_period_2013-2020/items/9499.php>.

[b] At the time of publication of this report, the European Union had submitted its instrument of ratification of the Doha Amendment and information on the joint implementation of such an amendment.

IV. Questions of implementation

5. No questions of implementation were identified by the ERT during the review.

Annex I

Key relevant data for the European Union

1. Table 4 provides key data and parameters for, and elections by, the European Union, relevant for the implementation of the second commitment period of the Kyoto Protocol. The information included in table 4 is as given by the Party in its report to facilitate the calculation of the assigned amount, unless otherwise specified.

Table 4
Key relevant data for the European Union

Key information or parameter provided	*Comment*
General Party information	
Did the Party have a QELRC in the first commitment period?	Yes
The European Union's QELRC in the second commitment period	The European Union, its member States and Iceland will fulfil their reduction targets under the second commitment period jointly. The QELRC for the European Union, its member States and Iceland is 80% of the base-year emissions
Has the Party reached an agreement under Article 4 of the Kyoto Protocol to fulfil its commitments jointly with other Parties?	Yes[a]
Base year	1990 for Iceland and all member States, except Bulgaria (1988), Hungary (average of 1985–1987), Poland (1988), Romania (1989) and Slovenia (1986)
Base year for HFCs, PFCs and SF_6	1995 for all member States, except Austria (1990), Croatia (1990), France (1990), Italy (1990), Malta (1990), Romania (1989) and Slovakia (1990), and 1990 for Iceland
Base year for NF_3	1995 for all member States, except Austria (2000), Croatia (2000), Greece (2000), Poland (2000), Portugal (2000), Romania (2000) and Slovakia (2000), and 1995 for Iceland
Base-year emissions, as reported by the Party and agreed by the ERT	5 875 692 700 t CO_2, including GHG emissions from conversion of forests (deforestation)
Information related to the calculation of the assigned amount and the commitment period reserve	
Assigned amount, as reported by the Party	15 813 089 340 t CO_2 eq, including GHG emissions from conversion of forests (deforestation)[b]
Assigned amount, final, as calculated by the ERT	15 813 089 338 t CO_2 eq, including GHG emissions from conversion of forests (deforestation)[b]
Approach used to calculate the average annual emissions for the first three years of the first commitment period	The difference between the assigned amount for the second commitment period and average annual emissions for the first three years of the first commitment period multiplied by eight is calculated on the basis of the joint assigned amount of the European Union, its member States and Iceland and is based on the gases and sources listed in Annex A to the Kyoto Protocol
Difference between the assigned amount for the	Not reported in the original submission

Key information or parameter provided	*Comment*
second commitment period and average annual emissions for the first three years of the first commitment period, multiplied by eight, as reported by the Party	
Difference between the assigned amount for the second commitment period and average annual emissions for the first three years of the first commitment period, multiplied by eight, final value, as calculated by the ERT	−1 063 645 030 t CO_2 eq
Commitment period reserve, as reported by the Party and agreed by the ERT	14 231 780 406 t CO_2 eq
Information related to activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol	
LULUCF parameters	The threshold values for the forest definition of each member State and Iceland are reported in table 2-12 of the European Union's report to facilitate the calculation of the assigned amount. The values range as follows: (a) Minimum tree crown cover: 10–30% (b) Minimum land area: 0.05–1 ha (c) Minimum tree height: 2–5 m
Elections under Article 3, paragraphs 3 and 4, of the Kyoto Protocol:	
(a) Afforestation/reforestation	Commitment period accounting for Iceland and all member States, except Denmark and Hungary
(b) Deforestation	Commitment period accounting for Iceland and all member States, except Denmark and Hungary
(c) Forest management	Commitment period accounting for Iceland and all member States, except Denmark and Hungary
(d) Cropland management	Elected by Denmark, Germany, Ireland, Italy, Portugal, Spain and the United Kingdom of Great Britain and Northern Ireland. Commitment period accounting for all indicated member States, except Denmark
(e) Grazing land management	Elected by Denmark, Germany, Ireland, Italy, Portugal and the United Kingdom. Commitment period accounting for all indicated member States, except Denmark
(f) Revegetation	Elected by Romania and Iceland. Commitment period accounting for both Parties
(g) Wetland drainage and rewetting	Elected by the United Kingdom. Commitment period accounting
FMRL	−306.706 Mt CO_2 eq/year applying the first-order decay function for harvested wood products, as included in the appendix to the annex to decision 2/CMP.7. For further information, see ID# 7 in table 3
Technical corrections to the FMRL as reported in the original submission	Not reported. For further information, see ID# 7 in table 3

Key information or parameter provided	*Comment*
3.5% of total base-year GHG emissions, excluding LULUCF, as reported by the Party and agreed by the ERT	205 454 627 t CO_2 eq
3.5% of total base-year GHG emissions, excluding LULUCF, multiplied by eight, as reported by the Party and agreed by the ERT	1 643 637 017 t CO_2 eq[d]
Will the Party exclude emissions from natural disturbances in accounting for:	
(a) Afforestation and reforestation	Elected by Bulgaria, Croatia, France, Greece, Ireland, Italy, Luxembourg, Malta, Netherlands, Portugal, Romania, Spain, Sweden, United Kingdom and Iceland
(b) Forest management	Elected by Austria, Belgium, Bulgaria, Croatia, Cyprus, Estonia, Finland, France, Greece, Ireland, Italy, Luxembourg, Malta, Netherlands, Portugal, Romania, Spain, Sweden, United Kingdom and Iceland

Abbreviations: ERT = expert review team, FMRL = forest management reference level, GHG = greenhouse gas, LULUCF = land use, land-use change and forestry, QELRC = quantified emission limitation or reduction commitment.

[a] Council decision 2015/1339 on the conclusion, on behalf of the European Union, of the Doha Amendment to the Kyoto Protocol to the United Nations Framework Convention on Climate Change and the joint fulfilment of commitments thereunder.

[b] The assigned amount of the European Union is the difference between the joint assigned amount and the sum of the individual assigned amounts of the member States and Iceland.

[c] Calculated on the basis of the joint assigned amount for the second commitment period and the average total annual emissions for the period 2008–2010 of the 28 European Union member States and Iceland, multiplied by eight.

[d] Additions to the assigned amount resulting from forest management under Article 3, paragraph 4, of the Kyoto Protocol, and from forest management project activities undertaken under Article 6 of the Kyoto Protocol in accordance with decision 2/CMP.7, annex, paragraph 13, apply only at the member State and Iceland level and not to the European Union as a whole.

2. Tables 5–7 provide an overview of total greenhouse gas emissions and removals, as submitted by the European Union. Where a Party has decided to voluntarily report indirect carbon dioxide emissions, this is noted in the relevant table.

Table 5
Total greenhouse gas emissions for the European Union, base year[a]–2014[c]
(kt CO_2 eq)

Year	*Total GHG emissions excluding indirect CO_2 emissions*		*Total GHG emissions including indirect CO_2 emissions[b]*		*Land-use change (Article 3.7 bis of the Doha Amendment)*
	Total including LULUCF	*Total excluding LULUCF*	*Total including LULUCF*	*Total excluding LULUCF*	
Base year	5 636 579.29	5 863 599.20	5 643 112.30	5 870 132.21	5 560.49
1990	5 421 801.70	5 661 550.6'	5 428 334.71	5 668 083.62	
1995	5 041 341.76	5 310 460.98	5 046 895.10	5 316 014.32	
2000	4 861 940.25	5 166 115.09	4 866 459.00	5 170 633.84	
2010	4 470 174.91	4 780 021.64	4 473 227.38	4 783 074.12	
2011	4 316 397.43	4 625 056.21	4 319 427.55	4 628 086.32	
2012	4 254 178.22	4 558 172.14	4 257 075.05	4 561 068.96	
2013	4 158 258.06	4 467 104.04	4 161 020.09	4 469 866.06	
2014	3 986 543.67	4 282 472.92	3 989 201.38	4 285 130.63	

Abbreviations: GHG = greenhouse gas, LULUCF = land use, land-use change and forestry.

[a] Base year refers to the base year under the Kyoto Protocol, which is 1990 for CO_2, CH_4 and N_2O for all member States except Bulgaria (1988), Hungary (1985–1987), Poland (1988), Romania (1989) and Slovenia (1986), and 1995 for HFCs, PFCs and SF_6 for all member States except Austria, Croatia, France, Italy, Malta and Slovakia (1990) and Romania (1989), and Iceland (1990) and 1995 for NF_3 for all member States except Austria, Croatia, Greece, Poland, Portugal, Romania and Slovakia (2000). For activities under Article 3, paragraph 3, of the Kyoto Protocol and forest management under Article 3, paragraph 4, only the inventory years of the commitment period must be reported. The European Union has not elected any activities under Article 3, paragraph 4, of the Kyoto Protocol as these activities are elected by each member State and Iceland. The values reported refer to the sum of the cumulative accounting quantities of member States and Iceland for these activities and are for information purposes only.

[b] Emissions/removals reported in the sector other (sector 6) are not included in total GHG emissions.

[c] The Party has reported indirect CO_2 emissions in common reporting format table 6.

Table 6
Greenhouse gas emissions by gas for the European Union, excluding land use, land-use change and forestry, 1990–2014[a]
(kt CO_2 eq)

	CO_2[b]	CH_4	N_2O	HFCs	PFCs	Unspecified mix of HFCs and PFCs	SF_6	NF_3
1990	4 473 622.22	735 517.25	387 303.79	29 125.64	25 864.43	5 705.72	10 920.80	23.78
1995	4 214 907.54	669 624.33	349 811.68	43 763.92	16 875.03	5 773.25	15 215.09	43.48
2000	4 175 112.19	610 182.50	307 785.37	52 862.41	11 951.34	2 077.74	10 546.47	115.81
2010	3 942 663.23	483 812.64	242 316.07	103 392.94	4 037.41	366.27	6 366.11	119.45
2011	3 799 012.64	474 131.06	238 143.25	105 957.74	4 309.35	176.68	6 228.38	127.22
2012	3 737 836.85	468 772.21	235 072.08	109 030.19	3 784.84	182.08	6 297.57	93.13
2013	3 655 316.86	456 911.60	235 764.33	111 383.37	4 038.61	193.40	6 189.40	68.49
2014	3 472 266.61	451 241.89	238 342.00	113 338.01	3 597.85	151.95	6 118.00	74.34
Per cent change 1990–2014	**–22.4**	**–38.6**	**–38.5**	**289.1**	**–86.1**	**–97.3**	**–44.0**	**212.7**

[a] Emissions/removals reported in the sector other (sector 6) are not included in total greenhouse gas emissions.
[b] CO_2 emissions include indirect CO_2 emissions reported in common reporting format table 6.

Table 7
Greenhouse gas emissions by sector for the European Union, 1990–2014[a, b]
(kt CO_2 eq)

	Energy	*IPPU*	*Agriculture*	*LULUCF*	*Waste*	*Other*
1990	4 358 789.41	518 137.87	546 488.66	–239 748.91	244 667.68	NO
1995	4 092 592.04	497 360.69	475 490.47	–269 119.22	250 571.12	NO
2000	4 019 817.38	451 799.74	460 858.59	–304 174.83	238 158.12	NO
2010	3 797 828.78	392 511.10	423 592.99	–309 846.74	169 141.25	NO
2011	3 651 559.09	388 824.55	424 260.96	–308 658.78	163 441.72	NO
2012	3 605 265.54	376 320.78	421 373.24	–303 993.91	158 109.40	NO
2013	3 520 413.76	374 353.96	424 906.16	–308 845.97	150 192.18	NO
2014	3 328 249.71	379 522.59	432 310.18	–295 929.25	145 048.16	NO
Per cent change 1990–2014	**–23.6**	**–26.8**	**–20.9**	**23.4**	**–40.7**	**NA**

Abbreviations: IPPU = industrial processes and product use, LULUCF = land use, land-use change and forestry, NA = not applicable, NO = not occurring.

[a] Emissions/removals reported in the sector other (sector 6) are not included in total greenhouse gas emissions.

[b] Totals include indirect CO_2 emissions reported in common reporting format table 6.

Annex II

Documents and information used during the review

A. Reference documents

"Guidelines for national systems for the estimation of anthropogenic greenhouse gas emissions by sources and removals by sinks under Article 5, paragraph 1, of the Kyoto Protocol". Annex to decision 19/CMP.1. Available at <http://unfccc.int/resource/docs/2005/cmp1/eng/08a03.pdf#page=14>.

"Guidelines for the preparation of the information required under Article 7 of the Kyoto Protocol". Annex to decision 15/CMP.1. Available at <http://unfccc.int/resource/docs/2005/cmp1/eng/08a02.pdf>.

"Guidelines for review under Article 8 of the Kyoto Protocol". Annex to decision 22/CMP.1. Available at <http://unfccc.int/resource/docs/2005/cmp1/eng/08a03.pdf#page=51>.

"Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part I: UNFCCC reporting guidelines on annual greenhouse gas inventories". Annex I to decision 24/CP.19. Available at <http://unfccc.int/resource/docs/2013/cop19/eng/10a03.pdf#page=4>.

"Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention". Annex to decision 13/CP.20. Available at <http://unfccc.int/resource/docs/2014/cop20/eng/10a03.pdf#page=6>.

"Implications of the implementation of decisions 2/CMP.7 to 4/CMP.7 and 1/CMP.8 on the previous decisions on methodological issues related to the Kyoto Protocol, including those relating to Articles 5, 7 and 8 of the Kyoto Protocol, part I: implications related to accounting and reporting and other related issues". Decision 3/CMP.11. Available at <http://unfccc.int/resource/docs/2015/cmp11/eng/08a01.pdf#page=5>.

"Implications of the implementation of decisions 2/CMP.7 to 4/CMP.7 and 1/CMP.8 on the previous decisions on methodological issues related to the Kyoto Protocol, including those relating to Articles 5, 7 and 8 of the Kyoto Protocol, part II: implications related to review and adjustments and other related issues". Decision 4/CMP.11. Available at <http://unfccc.int/resource/docs/2015/cmp11/eng/08a01.pdf#page=30>.

Intergovernmental Panel on Climate Change. 2006. *2006 IPCC Guidelines for National Greenhouse Gas Inventories*. Available at <http://www.ipcc-nggip.iges.or.jp/public/2006gl/index.html>.

Intergovernmental Panel on Climate Change. 2014. *2013 Revised Supplementary Methods and Good Practice Guidance Arising from the Kyoto Protocol*. Available at <http://www.ipcc-nggip.iges.or.jp/public/kpsg>.

Intergovernmental Panel on Climate Change. 2014. *2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands*. Available at <http://www.ipcc-nggip.iges.or.jp/public/wetlands/index.html>.

B. Additional information provided by the Party

Responses to questions during the review were received from Ms. Ana Danila (European Commission, Directorate-General for Climate Action), Mr. Ricardo Fernandez (European Environment Agency) and Ms. Spyridoula Ntemiri (European Environment Agency), including additional material on the methodology and assumptions used.

Annex III

Acronyms and abbreviations

CH_4	methane
CMP	Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol
CO_2	carbon dioxide
CO_2 eq	carbon dioxide equivalent
ERT	expert review team
FMRL	forest management reference level
GHG	greenhouse gas; unless indicated otherwise, total GHG emissions are the sum of CO_2, CH_4, N_2O, HFCs, PFCs and SF_6 without GHG emissions and removals from LULUCF
HFC	hydrofluorocarbon
IPPU	industrial processes and product use
LULUCF	land use, land-use change and forestry
NA	not applicable
NF_3	nitrogen trifluoride
NIR	national inventory report
NO	not occurring
N_2O	nitrous oxide
PFC	perfluorocarbon
QELRC	quantified emission limitation or reduction commitment
SF_6	sulphur hexafluoride
UNFCCC	United Nations Framework Convention on Climate Change